

HP StorageWorks

Mixed Media in HP StorageWorks Tape Libraries implementation guide

© Copyright 2005 Hewlett-Packard Development Company, L.P.

Hewlett-Packard Company makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

This document contains proprietary information, which is protected by copyright. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of Hewlett-Packard. The information is provided "as is" without warranty of any kind and is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Adobe® and Acrobat® are trademarks of Adobe Systems Incorporated.

Intel and Itanium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Microsoft, Windows, Windows NT, and Windows XP are U.S. registered trademarks of Microsoft Corporation.

Oracle® is a registered U.S. trademark of Oracle Corporation, Redwood City, California.

UNIX® is a registered trademark of The Open Group.

Mixed Media in HP StorageWorks Tape Libraries implementation guide

Contents

About this guide	5
Intended audience	5
Prerequisites	5
Related documentation	5
Document conventions and symbols	6
HP technical support	7
HP-authorized reseller	7
Helpful web sites	7
1 Overview	9
Configurations	9
Tape libraries	10
Tape drives	10
Supported library and drive configurations	10
Supported media and drive compatibility	12
Ultrium	12
DLT and SDLT	12
Supported backup applications	13
2 Implementation	15
Implementing mixed media in tape libraries that use the Command View interface	15
Mixing drive interface types in the same cluster	15
Mixed Fibre and parallel SCSI drives	15
Mixed LTO and SDLT parallel SCSI drives	16
Implementing mixed media on ESL9000 and MSL Series tape libraries using backup application software	16
HP OpenView Storage Data Protector	16
VERITAS NetBackup	16
IBM Tivoli Storage Manager	18
VERITAS Backup Exec	18
Computer Associates BrightStor ARCserve	19
EMC Legato NetWorker	19
EMC Legato NetWorker backups and restores with mixed media	19
A Additional Resources	21
Enterprise Backup Solutions	21
Hardware	21
Software	21
HP OpenView Storage Data Protector	21
VERITAS NetBackup and VERITAS Backup Exec	21
Computer Associates BrightStor ARCserve	21
IBM Tivoli Storage Manager	21
EMC Legato NetWorker	21
Index	23

About this guide

This guide describes how to implement mixed media functionality in an HP StorageWorks Enterprise Backup Solution (EBS) using HP hardware and several of today's leading data protection software applications.

Intended audience

This guide is intended for customers who want to mix drive technologies and media types in the same HP tape automation library.

Prerequisites

Before implementing a mixed media configuration, be sure you have:

- Reviewed the EBS Compatibility Matrix
- Properly installed and configured your EBS hardware per the *HP StorageWorks EBS Design Guide*
- Properly installed your backup application per vendor documentation and recommendations

 **NOTE:** The EBS documents listed above are available on the HP web site: <http://www.hp.com/go/ebs>.

Related documentation

- EBS Compatibility Matrix
- *HP StorageWorks EBS Design Guide*
- *HP StorageWorks Partitioning in an EBS Environment Implementation Guide*

Additional documentation, including white papers and best practices documents, can be found on the HP web site: <http://www.docs.hp.com>.

Document conventions and symbols


Table 1 Document conventions

Convention	Element
Medium blue text: Figure 1	Cross-reference links and e-mail addresses
Medium blue, underlined text (http://www.hp.com)	Web site addresses
Bold font	<ul style="list-style-type: none">• Key names• Text typed into a GUI element, such as into a box• GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
<i>Italics font</i>	Text emphasis
Monospace font	<ul style="list-style-type: none">• File and directory names• System output• Code• Text typed at the command-line
<i>Monospace, italic font</i>	<ul style="list-style-type: none">• Code variables• Command-line variables
Monospace, bold font	Emphasis of file and directory names, system output, code, and text typed at the command line

 **WARNING!** Indicates that failure to follow directions could result in bodily harm or death.

 **CAUTION:** Indicates that failure to follow directions could result in damage to equipment or data.

 **IMPORTANT:** Provides clarifying information or specific instructions.

 **NOTE:** Provides additional information.

 **TIP:** Provides helpful hints and shortcuts.

HP technical support

Telephone numbers for worldwide technical support are listed on the HP support web site:
<http://www.hp.com/support/>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign up online using the Subscriber's choice web site at
<http://www.hp.com/go/e-updates>.

- Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

HP-authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-282-6672.
- Elsewhere, visit the HP web site: <http://www.hp.com>. Then click **Contact HP** to find locations and telephone numbers.

Helpful web sites

For additional information, see the following HP web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- <http://www.hp.com/support/>
- <http://www.docs.hp.com>

1 Overview

The merging of diverse backup solutions, data migration between various systems, and the assurance that data stored on differing technologies will always be accessible are a few of the many challenges of consolidating and integrating IT staff and infrastructure. Therefore, it is imperative to have a data protection solution that supports new generations of tape drives with greater media capacities, as well as different drive technologies within the same tape library frame. HP understands the need to easily increase backup capacity and to protect the ability to decide between tape drive technologies as the IT requirements evolve.

HP enterprise and mid-range libraries support DLT8000, SDLT, and Ultrium tape drives in the same automated tape library. The customer's investment is further protected because they are not locked into a specific drive technology. HP tape libraries use partition capabilities in the hardware and backup applications to support mixed tape drive and media requirements.

HP OpenView Storage Data Protector allows the mixing of different drive technologies and media types. Additionally, there are many Independent Software Vendor (ISV) backup applications that also support this feature. This guide describes how to implement mixed media in an Enterprise Backup Solution (EBS) environment using HP hardware and several of today's leading data protection applications.

Configurations

The hardware and software components of an HP EBS configuration may consist of:

- Server(s) containing Fibre Channel Host Bus Adapter(s)
- RAID Array Storage
- Fibre Channel SAN Switch(es)
- Router(s), such as the HP StorageWorks e2400-FC 2G Interface Controller, HP StorageWorks e2400-160 FC Interface Controller, or the HP StorageWorks Network Storage Router E1200-160
- HP StorageWorks tape libraries
- HP EBS supported operating systems:
 - HP-UX
 - Microsoft® Windows® Server 2003 (32-bit and 64-bit)
 - Microsoft Windows 2000
 - Microsoft Windows NT®
 - Novell NetWare
 - Tru64 UNIX™
 - Linux
 - Sun Solaris
 - IBM AIX
- One of the following backup applications:
 - HP OpenView Storage Data Protector
 - VERITAS NetBackup
 - IBM Tivoli Storage Manager
 - VERITAS Backup Exec
 - Computer Associates BrightStor ARCserve
 - EMC Legato NetWorker

Tape libraries

HP StorageWorks tape libraries that support mixed media and mixed drive technologies include:

- ESL E-Series
- ESL9000 Series
- MSL6000 Series
- MSL5000 Series

Tape drives

Tape drives supported in HP StorageWorks mixed media libraries include:

- Ultrium 960
- Ultrium 960-FC
- Ultrium 460
- Ultrium 460-FC
- Ultrium 230
- SDLT 600
- SDLT 320
- SDLT 220
- DLT8000

Supported library and drive configurations

Table 2 shows the mixed media support for each model of the ESL E-Series tape libraries. Table 3 shows the mixed media support for each model of the ESL9000 Series tape libraries. Table 4 shows the mixed media support for each model of the MSL Series tape libraries. All tables are up to date as of the writing of this document. See the EBS Compatibility Matrix for the latest tape library information.

Table 2 ESL E-Series tape libraries

Base Library	SDLT 320/600	Ultrium 460/960
ESL712e	Supported	Supported
ESL630e	Supported	Supported
ESL322e*	Supported	Supported
ESL286e*	Supported	Supported



 **NOTE:** *To be supported in a Mixed Media environment, the ESL322e and ESL286e tape libraries must have capacity upgrade kits to enable all six panels.

Table 3 ESL9000 Series tape libraries

Base library	DLT8000 & SDLT*	Ultrium 230/460/960	SDLT* & Ultrium*
ESL9198DLX	Supported (LVD only)	Supported	Supported (LVD only)
ESL9198SL	Supported (LVD only)	Supported	Supported (LVD only)
ESL9326D/DX	Supported (HVD only)	n/a	n/a
ESL9326SL	Supported (LVD only)	Supported	Supported (LVD only)
ESL9595 (SDLT 220)	Supported (LVD only)	Supported	Supported (LVD only)
ESL9322 (Ultrium 230)	n/a	Supported	Supported (LVD only)
ESL9595 (Ultrium 230)	n/a	Supported	Supported (LVD only)
ESL9322 (SDLT 320)	Not supported	Supported	Supported (LVD only)
ESL9595 (SDLT 320)	Not supported	Supported	Supported (LVD only)
ESL9595 (Ultrium 460)	n/a	Supported	Supported (LVD only)
ESL9322 (Ultrium 460)	n/a	Supported	Supported (LVD only)
* Includes all drive generations, e.g. SDLT 220, SDLT 320,SDLT 600, Ultrium 230, Ultrium 460, Ultrium 960.			

Table 4 MSL tape libraries

Base library	DLT8000 & SDLT* (single unit)	Ultrium 230/460/960 (single unit)	SDLT* & Ultrium* (stacked units**)
MSL5026DLX (opal)	Supported	n/a	Supported
MSL5026SL (opal)	Supported	n/a	Supported
MSL5026SL (graphite)	Supported	n/a	Supported
MSL5052SL	Supported	n/a	Supported
MSL5030 (Ultrium 230)	n/a	Supported	Supported
MSL5060 (Ultrium 230)	n/a	Supported	Supported
MSL5026 (SDLT 320)	Supported	n/a	Supported
MSL5052 (SDLT 320)	Supported	n/a	Supported
MSL6030	n/a	Supported	Supported
MSL6060	n/a	Supported	Supported
*Includes all drive generations, e.g. SDLT 220, SDLT 320, SDLT 600, Ultrium 230, Ultrium 460, Ultrium 960.			
**SDLT and Ultrium drives cannot be mixed within the same MSL unit.			

 **NOTE:** Tivoli Storage Manager does not support mixing SDLT 220, 320, and 600 drives in the same library.

For additional information about supported drive upgrades, go to the HP web site:

<http://h18006.www1.hp.com/products/storageworks/tapecompatibility.html> and then select “Enterprise class libraries drive upgrade matrix” for ESL9000 series libraries or “Business class libraries drive upgrade matrix” for MSL5000/6000 series libraries.

Supported media and drive compatibility

Ultrium

HP Ultrium data cartridges are designed to take full advantage of Ultrium technology and contain features that are exclusive to HP. HP Ultrium data cartridges feature active internal head cleaning, self-diagnostic capacities, cartridge memory, and are designed for long life and superior reliability. The Ultrium 960 also represents the first HP tape drive solution to deliver support for Write-Once, Read-Many (WORM) media.

Table 5 Ultrium media and drive capability

Drive	Ultrium 800 GB media	Ultrium 800 GB WORM media	Ultrium 400 GB media	Ultrium 200 GB media
Ultrium 960	Read/Write	Read/Write	Read/Write	Read
Ultrium 460	Not compatible	Not compatible	Read/Write	Read/Write
Ultrium 230	Not compatible	Not compatible	Not compatible	Read/Write


DLT and SDLT

DLT8000 drives use DLT IV media only. SDLT 220 and 320 drives both use one type of SDLT media, while SDLT 600 drives use another. Each drive formats media differently and has varying capabilities when reading or writing to non-native media. The SDLT 600 Tape Drive includes support for WORM (Write-Once, Read-Many) functionality. WORM implementation is dependent on the backup application. Additional information on which applications support WORM can be found on the HP web site: <http://www.hp.com/go/connect>. Table 6 provides an easy reference for tape compatibility:

Table 6 DLT IV and SDLT media and drive compatibility

	SDLT media formatted by SDLT 600 drive	SDLT media formatted by SDLT 320 drive	SDLT media formatted by SDLT 220 drive	DLT IV media formatted by DLT8000 drive
SDLT 600	Read/Write	Read	Read	Not compatible
SDLT 320	Not compatible	Read/Write	Read/Write	Read
SDLT 220	Not compatible	Not compatible	Read/Write	Read
DLT 8000	Not compatible	Not compatible	Not compatible	Read/Write

The Density Select application, available on the Density Select Software CD included in the SDLT kit, provides a way for you to write data cartridges with an SDLT 320 tape drive that are backward-compatible with SDLT 220 tape drives.

 **NOTE:** The orange light on an SDLT 320 drive illuminates when reading media formatted by an SDLT 220 drive.

For additional media compatibility information, go to the HP web site:
<http://www.hp.com/products1/storage/products/storagemedia/index.html> and click "Storage media one stop compatibility matrix."

Supported backup applications

The backup applications that can be used to implement mixed media with HP StorageWorks tape libraries are:

- HP OpenView Storage Data Protector
- VERITAS NetBackup
- IBM Tivoli Storage Manager
- VERITAS Backup Exec
- Computer Associates BrightStor ARCserve
- EMC Legato NetWorker

2 Implementation

Implementing mixed media in tape libraries that use the Command View interface

Mixed media configurations require partitioning in the ESL E-Series and ESL9000 Series Tape Libraries using Command View. Partitioning a physical library with mixed drive and media types allows the different types of media and drives to be logically separated. This hardware separation reduces the complexity of configuration within the backup application. Keeping the media and drives separated also greatly reduces the chance for media to be inserted or used in the wrong drive. See the *HP StorageWorks Partitioning in an EBS Environment Implementation Guide*.

All ESL tape libraries must meet the following minimum configuration requirements to operate in a mixed media environment:


- Partitioning is required and must be enabled.
- The library must have Secure Manager ESL, which is needed to create partitions, and to manage host mapping.
- Both left and right loadports must be upgraded to have removable loadport capability prior to installing the mixed media conversion kit. This prevents libraries from having a combination of fixed and removable loadports.
- The backup application must be configured to interface with each partition as though it were a separate physical library. There is no need to configure the application to associate drives with corresponding media pools as described in the next section of this document.


Mixing drive interface types in the same cluster

Mixed Fibre and parallel SCSI drives

Mixing FC and parallel SCSI drives in the same cluster will require extra care. Since the standard cabling approach cannot be used caution should be taken to keep parallel SCSI cables from causing any undue strain on the Fibre cables. Lay the Fibre Channel cables on top of the SCSI cables when routed through the card cage, the cable bracket, and the cable channel.

In addition, ensure that all drives have their cabling adjusted so that the drives are cabled in the normal order. For example: If you have two parallel SCSI drives in a cluster and then install four FC drives in the library, the first two drives installed in the cluster are the parallel SCSI drives and are cabled to bus 0 and bus 1 on the E2400-160 card. When cabling the Fibre drives, they must be cabled so that cluster 1 drive C is cabled to port 0 on the E2400-FC card, cluster 1 drive D is cabled to port 1 on the E2400-FC, cluster 2 drive A is cabled to port 2 on the E2400-FC card, cluster 2 drive B is cabled to port 3 on the E2400-FC card. All subsequent drives must be installed the same manner.

 **NOTE:** Filling clusters with mixed drive types that are not a multiple of four can create a situation where there are not enough ports available for the remaining drives. For example: 14 SCSI drives require four E2400-160 cards. If the final 10 slots are filled with Fibre drives, three E2400-FC cards are needed. However, the card cage only holds a combination of six E2400-160 and E2400-FC cards. There will be two fibre drives without ports available.

 **NOTE:** Mixing drive interface types within a single cluster results in an unsupported configuration. There will not be an available Ethernet port to connect the second interface controller.

Mixed LTO and SDLT parallel SCSI drives

This combination is supported. HP recommends that all drives of a particular type be contiguous within the drive clusters. Install all of the first type of drive, and then all of the second type. While not necessary, it allows for easier identification and debug.

Implementing mixed media on ESL9000 and MSL Series tape libraries using backup application software

The remainder of this chapter provides information on implementing mixed media using backup application software.

HP OpenView Storage Data Protector

To configure an HP tape library with Data Protector in a mixed media environment:

- Configure several sub-libraries for the library. One library definition per media type.
- Configure at least one media pool (or use the default pool) per media type.
- Configure the library robotics once per media type, including the slot range for the media type. Make sure that only one host is controlling the robot, that is, the robotic control for each of the sub-library robotic definitions are identical.
- Configure all the drives for a media type and link them to the related library robotic and media pool. Make sure the drive index is unique for each physical device, regardless of media type.


The “Autoconfigure Devices” wizard is not supported for mixed media operation. To configure mixed media operation, you must create and configure the sub-libraries manually using the following steps.

1. Create the first sub-library by selecting the **Devices and Media** context. Right-click on **Devices** and then click **Add Device**.
2. Enter the library name in **Device Name**. The device name should reference the media type.
3. Select the Device Type, which is **SCSI-II library**.
4. Select the server you want to use as the robotic host. This should be the same for other sub-libraries. Click **Next** to continue.
5. Enter the SCSI address of the library robotic if known. You can also let Data Protector discover the robotic address by clicking the down arrow. Select the proper robotics address from the list. Click **Next** to continue.
6. The next page displays all the slots available from the library (MSL or ESL). Delete the slots or a range of slots for the different media type. Click **Next** to continue.
7. Select the proper media type for this sub-library. Click **Finish** to continue.
8. You will be prompted to configure the drives. Configure the drives for this media type.
9. When all the drives are configured for this sub-library, repeat step 1 for the next sub-library.

VERITAS NetBackup

To configure an HP tape library with VERITAS NetBackup in a mixed media environment:

1. Set up the SAN components. Ensure operating system correctly recognizes the tape and robotic devices.
2. Install NetBackup and any necessary patches.

 **NOTE:** If installing NetBackup for the first time, there is a wizard that launches to configure NetBackup. Auto Inventory is a step in this wizard and should be skipped, unless steps 4 through 6 have already been performed.

3. Configure tape and robotic devices with the Device Configuration Wizard. For each different drive type, there should be a corresponding storage unit created. Verify that all devices were properly detected and configured, multi-hosted (if applicable), and that the corresponding storage units were created.

4. Each piece of media must be physically labeled with a barcode. Each type of media should have the same first 3 letters in their barcode and be different from the other labeled media types. Each type of media will have a unique barcode family. For example, all Ultrium-1 tape barcodes would start with BJZ (for example, BJZ001, BJZ002...), and all Ultrium-2 tape barcodes would start with AJK (for example, AJK001, AJK002...).
5. Create a volume pool for each different type of media that is present:
 - a. In the navigation pane (left pane) of the NetBackup Management window, expand the "Media" section under "Media and Device Management."
 - b. Right-click **Volume Pools**.
 - c. Select **New Volume Pool**.
 - d. Create volume pools for each different type of media present. In this example, one pool is for Ultrium-1 and another pool is for Ultrium-2.
6. Set up barcode rules.
 - a. In the navigation pane click once on Volume Pools to highlight it, then select **Actions** from the NetBackup management window menu bar.
 - b. Select **New Volumes**.
 - c. Select the corresponding media type in the Type field. Select ½" cartridge tape for Ultrium-1 and ½" cartridge tape 2 for Ultrium-2.
 - d. Select the appropriate robot and enter the number of volumes being used for that particular pool.
 - e. Enter the first three letters of the barcode for one of the media types in the Media ID field.
 - f. Select the proper pool for that media type in the Volume Pool field. Set a barcode rule for each unique barcode/media type, as well as one for the cleaning tapes (CLN).
 - g. Select the appropriate Volume group.
7. Inventory the robot. The tapes should be recognized as the correct type and be placed into the correct volume pool, as defined by the barcode rules.
8. Set up a backup policy that specifies the storage unit and corresponding media pool to be used for that backup job.


IBM Tivoli Storage Manager

To configure an HP tape library in a mixed media environment:

1. Define the library as an “Automated Library” to TSM and create a device path for the library robot.
2. Define the drives as “Automated Drives” to TSM and create device paths for each drive.
3. Define separate device classes, one for each drive type. Assign each device class to the library.
4. Define sequential-access storage pools for each drive type and assign the previously created device classes to the corresponding storage pool.
5. Define separate policy domains and assign the corresponding storage pool within each domain's backup copy group. TSM client nodes can then be assigned to one or the other policy domain.

For example, a single ESL9595 with four LTO2 drives and four SDLT2 drives would be defined in TSM as an automated library:

- The four LTO2 drives would be defined within the library, belonging to a device class that utilized the LTO2 drive format.
- The LTO2 device class would be assigned to a storage pool to manage only the LTO2 tapes.
- The four SDLT2 drives would be defined within the same library, but would belong to a device class that utilized the SDLT2 drive format.
- The SDLT2 device class would be assigned to a storage pool to manage only the SDLT2 tapes.

 **IMPORTANT:** SDLT 220 and SDLT 320 drives are not supported in the same library.

For more detailed information on configuration of mixed-media libraries with TSM, see the TSM Administrator's Guide section, “Mixing Device Types in Libraries.”

VERITAS Backup Exec

To configure an HP tape library with VERITAS Backup Exec in a mixed media environment:

1. Set up SAN components. Ensure that the operating system correctly recognizes the tape and robotic devices.
2. Install Backup Exec and any necessary patches.
3. Configure tape and robotic devices with the Device Configuration Wizard.
4. Each piece of media must be physically labeled with a barcode. Each type of media should have the same first 3 letters in their barcode and be different from the other labeled media types. Each type of media will have a unique barcode family. For example, all Ultrium-1 tape barcodes would start with BJZ (for example, BJZ001, BJZ002...), and all Ultrium-2 (110/220) tape barcodes would start with AJK (for example, AJK001, AJK002...).
5. Set up barcode rules:
 - a. On the Tools menu, click **Options**.
 - b. In the Properties pane, under Settings, click **Bar Code Rules**.
 - c. Click **Add**.
 - d. Select a media type.
 - e. Enter the library vendor (HP).
 - f. Type in a barcode prefix that corresponds to the physical barcode labeling scheme from step 4.
6. Verify that the barcode rules are enabled for the robotic library. The barcode rules do not go into effect until you enable them for the robotic library.
7. Each drive must have the correct media type enabled for read/write access. To configure:
 - a. In the Devices window, right-click the drive.
 - b. Click Properties.
 - c. Select the Media Types tab
 - d. Enable or disable read and write access for the appropriate media types.


 **NOTE:** VERITAS Backup Exec supports mixed media in a homogeneous Windows environment only.

Computer Associates BrightStor ARCserve

To configure an HP tape library with CA BrightStor ARCserve in a mixed media environment:

1. When installing BrightStor ARCserve, select Tape Library Option (TLO) from the BrightStor ARCserve products list. Select the Storage Area Network option if applicable.
2. After setting up TLO and SAN options, run the BrightStor ARCserve Device Configuration.
3. Select the Virtual Library option and click Next.
4. From the Virtual Library configuration screen click New and select the number of drives you want to assign to the virtual library from the list of drives displayed.
5. Select the number of slots assigned to the previously selected drives.
6. Assign the remaining slots to remaining drives accordingly.

The key to correctly creating virtual libraries is to remember that the first library to be created using the Virtual Library Option in the Device Configuration Utility uses the first “n” slots in the library. This means that the first “n” slots must contain the correct type of tapes for the drives that are assigned to this virtual library. Subsequently created virtual libraries use the next “m” slots, and these slots must contain the correct type of tapes for the type of drives that are assigned to this virtual library.

 **NOTE:** See the library owner's manual for both slot and drive numbering and identification.


EMC Legato NetWorker

To configuring an HP tape library with EMC Legato NetWorker in a mixed media environment:


1. Execute the Administrator Tool (on pulldown or icon from Windows; in UNIX use “nwadmin”).
2. From the **Media** tab click **Jukebox** and disable the “Auto Media Management” attribute.
3. From the **Media** tab click **Pools** and create a media pool for each media type assigning the specific devices that pool will use.
4. Also, while creating each pool set the “Recycle to other pools” and “Recycle from other pools” to “No”.

EMC Legato NetWorker backups and restores with mixed media

Disabling auto media management prevents the EMC Legato NetWorker software from inadvertently labeling a tape. If you are sure that all of the unlabeled media are scratch media, you can safely enable auto media management for a library that has mixed media, for example, DLT7000 and DLT8000 drives.

 **NOTE:** During a backup, the EMC Legato NetWorker software first checks for available drives. If there are multiple drives available, the software uses the drive with the least number of mounts. The software has an internal counter for the number of tape mounts on each drive. This internal counter is subsequently used to evenly distribute mount requests among the drives in a library.

Pools can be used to restrict what device and media type the EMC Legato NetWorker software uses for a backup. However, the software ignores those restrictions for restores, because a restore is designed to use the first drive it finds.

 **IMPORTANT:** A restore attempts to load the required cartridge into the first drive found regardless of the drive type, which could lead to unexpected results. Therefore, to perform a restore operation with mixed media, the operator must manually mount the required cartridges before initiating the restore.

For more information on managing storage devices, see the *EMC LEGATO NetWorker Administrator's Guide*.

A Additional Resources

For additional information on implementing mixed media in an HP StorageWorks tape library, see the following web sites.

Enterprise Backup Solutions

<http://www.hp.com/go/ebs>

Click “Technical Documentation” to access the EBS Design Guide and implementation guides. Click “Compatibility and Tools” to access the EBS Compatibility Matrix.

Hardware

<http://www.hp.com/go/tape>

Click on any product to view its specifications and other technical documentation.

Software

HP OpenView Storage Data Protector

<http://www.hp.com/go/dataprotector>

VERITAS NetBackup and VERITAS Backup Exec

<http://www.veritas.com>

Computer Associates BrightStor ARCserve

<http://www.ca.com>

IBM Tivoli Storage Manager

<http://www.ibm.com/support/us>

EMC Legato NetWorker

<http://www.legato.com>

Index

A

audience 5
authorized reseller, HP 7

C

Computer Associates BrightStor ARCserve 19
conventions
 document 6
 text symbols 6

D

Density Select 12
DLT
 drive compatibility 12
 media compatibility 12
document
 conventions 6
 prerequisites 5
 related documentation 5
documentation, HP web site 5
drive configurations
 supported 10

E

EBS
 hardware components 9
 software components 9
 supported backup applications 9
EMC Legato NetWorker 19
ESL E-Series tape libraries 10
ESL9000 Series tape libraries 11

H

help, obtaining 7
HP
 authorized reseller 7
 storage web site 7
 Subscriber's choice web site 7
 technical support 7
HP OpenView Storage Data Protector 9, 16

I

IBM Tivoli Storage Manager 18

L

loadport requirements 15

M

mixed media support
 drive configurations 10
 tape drive 10
 tape libraries 10
MSL tape libraries 11

O

overview 9

P

partitioning 15
prerequisites 5

R

rack stability, warning 7
related documentation 5

S

Secure Manager ESL 15
Subscriber's choice, HP 7
supported backup applications 9, 13
symbols in text 6

T

tape drives
 mixed media support 10
tape libraries
 mixed media support 10
technical support, HP 7
text symbols 6
Tivoli Storage Manager
 support of SDLT drives 12

U

Ultrium
 drives, capability 12
 media, capability 12

V

VERITAS Backup Exec 18
VERITAS NetBackup 16

W

warning

rack stability [7](#)

web sites

Computer Associates [21](#)

EBS [21](#)

EMC [21](#)

HP documentation [5](#)

HP storage [7](#), [21](#)

HP storage software [21](#)

HP Subscriber's choice [7](#)

IBM [21](#)

VERITAS [21](#)